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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,377	12/09/2003	Wilford T. Yopp	FGT 1857 PA	1376
28549	7590	09/08/2005	EXAMINER	
KEVIN G. MIERZWA ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034			TRAN, DALENA	
			ART UNIT	PAPER NUMBER
			3661	

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Please find below and/or attached an Office communication concerning this application or proceeding.



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10/707377

EXAMINER

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Commissioner for Patents

9

Office Action Summary	Application No. 10/707,377	Applicant(s) YOPP, WILFORD T.	
	Examiner Dalena Tran	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 6/3/05. As per request, claim 5 has been cancelled. Claims 1, 8-11, and 16 have been amended. Claims 21-27 have been added. Thus, claims 1-4, and 6-27 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, and 6-27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gloger et al. (6,838,980) in view of Shuman et al. (US 2003/0065432 A1).

As per claim 1, Gloger et al. disclose a pre-crash sensing system for a vehicle, comprising: at least one sensor repeatedly detecting at least one object located external to the vehicle (see at least the abstract), and a controller coupled to at least one sensor and selectively generate an object classification list (see at least column 2, lines 21-42; and column 2, lines 1-22). Gloger et al. do not disclose updating object classification list. However, Shuman et al. disclose controller updating object classification list one time for each of at least one object (see at least [0072]), and classification list for transmission to a safety countermeasure system (see at least [0096] through [0104]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining updating object

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classification list for continuously detect vehicle surrounding information to generate a warning to prevent collision.

As per claim 2, Gloger et al. disclose wherein at least one sensor is utilized for detecting at least one parameter of at least one object, at least one sensor transmitting at least one parameter to controller, controller selectively processing at least one parameter to generate object identification list and object classification list (see at least columns 3-4, lines 63-9).

As per claim 3, Gloger et al. do not explicitly disclose at least one parameter includes at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature. However, Gloger et al. disclose object size (see column 4, line 7). Size is inherently include height and width. Also, it is well known in the art to detect object parameter include at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature, as disclose in Shuman et al. (see at least [0153] through [0156]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining at least one parameter includes at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature to accurate classify object into object type and to provide collision warning and restraint system appropriately.

As per claims 4 and 6, Gloger et al. disclose at least one sensor includes at least one of a visual imaging camera and an electro-magnetic wave ranging device, wherein visual imaging camera is selected from the group consisting of a monocular camera and a binocular camera (see at least columns 1-2, lines 61-42).

As per claims 5 and 7, Gloger et al. disclose at least one sensor includes both visual imaging camera and an electro-magnetic wave ranging device (see at least columns 3-4, lines

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23-17).

As per claim 8, Gloger et al. do not disclose determine previously detected and undetected object. However, Shuman et al. disclose an object tracking module for storing object an object identification list and object classification list, object identification list including a plurality of identities of previously detected objects as defined by a plurality of archived parameters (see at least [0155]), a process determining module coupled to object tracking module and at least one sensor, process determining module for receiving object identification list from object tracking module and receiving at least one parameter from at least one sensor, process determining module for determining that object is a previously undetected object (see at least [0155], and [0156]), and an object classifying module coupled to and actuated by process determining module, object classifying module for identifying at least one object and updating object identification list stored in object tracking module, object classifying module for classifying object into a predetermined category and updating object classification list stored in object tracking module (see at least the abstract; and [0072]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determine previously detected and undetected object, for continuously updating tracking objects surrounding vehicle in order to detect any dangerous imminent to the vehicle.

Also, as per claim 9, Shuman et al. disclose an object tracking module for storing object identification list and object classification list, object identification list including a plurality of identities of previously detected objects as defined by a plurality of archived parameters, a process determining module coupled to object tracking module and at least one sensor, process determining module for receiving object classification list from object tracking module and

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receiving at least one parameter from at least one sensor, process determining module for determining that object is a previously unclassified object (see at least [0155] and [0156]), and an object classifying module coupled to and actuated by process determining module, object classifying module for identifying at least one object and updating object identification list stored in object tracking module, object classifying module for classifying object into a predetermined category and updating object classification list stored in object tracking module (see at least the abstract; and [0072]).

As per claim 10, Gloger et al. do not disclose previously detected objects, and determining at least one object requires an updated classification. However, Shuman et al. disclose an object-tracking module for storing an object identification list and object classification list, object identification list including a plurality of identities of previously detected objects as defined by a plurality of archived parameter (see [0154 through [0156]); a process-determining module coupled to object-tracking module and at least one sensor, process-determining module receiving object classification list from said object tracking module and receiving at least one parameter from at least one sensor, process-determining module for determining that said at least one object requires an updated classification (see [0155] through [0157]; and [0072]); and an object-classifying module coupled to and actuated by process-determining module, object-classifying module for classifying said object into a predetermined category and updating object classification list store in object- tracking module (see the abstract; and [0070] through [0072]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determine previously detected object, and determining at least one object requires an updated classification

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for continuously updating tracking objects surrounding vehicle in order to detect any dangerous imminent to the vehicle.

As per claim 11, Gloger et al. disclose utilizing at least one sensor for detecting at least one object located external to the vehicle; utilizing a controller for producing a queue of at least one object; object classification list being stored in controller (see the abstract; and columns 1-2, lines 61-42); controller couple to at least one sensor and intended to selectively generate an object identification list and an object classification list (see column 2, lines 50-67; and column 3, lines 1-22). Gloger et al. do not disclose determining at least one object requires an updated classification. However, Shuman et al. disclose utilizing controller for individually determining that each of at least one object requires that an object classification list is updated (see [0155] through [0157]; and [0072]); and object classification list for transmission to a safety countermeasure system (see [0096] through [0104]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determining at least one object requires an updated classification for continuously updating tracking objects surrounding vehicle in order to detect any dangerous imminent to the vehicle.

As per claim 12, Gloger et al. do not explicitly disclose a height, a width, a depth, a range, a range rate, an angle, and a visual feature. However, Gloger et al. disclose object size (see column 4, line 7). Size is inherently include height and width. Also, it is well known in the art to utilizing at least one of a visual imaging camera and an electro-magnetic wave-ranging device for detecting at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature, as disclose in Shuman et al. (see at least [0171] through [0174]). It would have

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been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature to accurately classify object into object type and to provide collision warning and restraint system appropriately.

As per claim 13, Shuman et al. disclose determining that each of at least one object has been previously classified (see [0155] to [0156]).

As per claim 14, Gloger et al., and Shuman et al. do not disclose determining that each of at least one object is associated with an outdated classification. However, Shuman et al. disclose update the data model as the new object being sense (see [0072]), and determining object identified and not identified along with their corresponding classification (see [0156]), this implies determining that each of at least one object is associated with an outdated classification because Shuman et al. determine the classification object need to be updated as the sensors acquire new data; and also when determine the object has been identified and not been identified along with their corresponding classification, this suggest that the classification list has been revise to include the new objects. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determining that each of at least one object is associated with an outdated classification to continuous update the object surround the vehicle to prevent collision and safety for the vehicle.

As per claim 15, Shuman et al. disclose transmitting object classification list to a safety countermeasure system of the vehicle (see [0096] through [0104]).

As per claim 16, Gloger et al. disclose utilizing at least one sensor for detecting at least one object located external to the vehicle; utilizing a controller for producing a queue of at least

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one object; object classification list being stored in controller (see the abstract, and columns 1-2, lines 61-42); controller couple to at least one sensor and intended to selectively generate an object identification list and an object classification list (see column 2, lines 50-67; and column 3, lines 1-22). Gloger et al. do not disclose determining at least one object requires an updated classification. However, Shuman et al. disclose utilizing controller for individually determining that each of at least one object requires that at least one of an object identification list and an object classification list is updated (see [0155] through [0157]; and [0072]); and object classification list for transmission to a safety countermeasure system (see [0096] through [0104]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determining at least one object requires an updated classification for continuously updating tracking objects surrounding vehicle in order to detect any dangerous imminent to the vehicle.

As per claim 17, Gloger et al. do not explicitly disclose a height, a width, a depth, a range, a range rate, an angle, and a visual feature. However, Gloger et al. disclose object size (see column 4, line 7). Size is inherently include height and width. Also, it is well known in the art to utilizing at least one of a visual imaging camera and an electro-magnetic wave-ranging device for detecting at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature, as disclose in Shuman et al. (see at least [0171] through [0174]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining at least one of a height, a width, a depth, a range, a range rate, an angle, and a visual feature to accurate classify object into object type and to provide collision warning and restraint system appropriately.

As per claim 18, Shuman et al. disclose determining that each of at least one object has been previously classified (see [0155] to [0156]).

As per claim 19, Gloger et al., and Shuman et al. do not disclose determining that each of at least one object is associated with an outdated classification. However, Shuman et al. disclose update the data model as the new object being sense (see [0072]), and determining object identified and not identified along with their corresponding classification (see [0156]), this implies determining that each of at least one object is associated with an outdated classification because Shuman et al. determine the classification object need to be updated as the sensors acquire new data; and also when determine the object has been identified and not been identified along with their corresponding classification, this suggest that the classification list has been revise to include the new objects. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determining that each of at least one object is associated with an outdated classification to continuous update the object surround the vehicle to prevent collision and safety for the vehicle.

As per claim 20, Shuman et al. disclose storing at least one of an updated object identification list and an updated object classification list in an object-tracking module within controller at the end of an image processing cycle (see [0211] through [0212]; and [0221] through [0226]).

As per claims 21-22, Gloger et al. disclose utilizing at least one sensor for detecting at least one object located external to the vehicle; utilizing a controller for producing a queue of at least one object; object classification list being stored in controller (see the abstract; and columns 1-2, lines 61-42); controller couple to at least one sensor and intended to selectively generate an

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object identification list and an object classification list (see column 2, lines 50-67; and column 3, lines 1-22). Gloger et al. do not disclose determining at least one object requires an updated classification. However, Shuman et al. disclose utilizing controller for individually determining that each of at least one object requires that at least one of an object identification list and an object classification list is updated (see [0155] through [0157]; and [0072]); and object classification list for transmission to a safety countermeasure system (see [0096] through [0104]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining determining at least one object requires an updated classification for continuously updating tracking objects surrounding vehicle in order to detect any dangerous imminent to the vehicle.

Also, as per claim 23, Shuman et al. disclose controller determines that object classification list requires updating one time for each of at least one object (see [0072]; and [0155] through [0157]).

As per claim 24, Shuman et al. disclose at least one sensor repeatedly detects at least one object over a series of sensing cycles and controller updates object classification list the first time each of at least one object is processed by controller (see the abstract; [0072]; and [0155] through [0157]).

As per claim 25, Shuman et al. disclose object classification list includes at least one previously classified object and at least one predetermined category (see [0155] to [0156]).

As per claim 26, Gloger et al., and Shuman et al. do not explicitly disclose controller executes a classification subroutine when at least one object is omitted from object classification list. However, Shuman et al. disclose the classification process classifies the objects that were

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not found in the database (see at least last 4 lines of [0155]), also, Shuman et al. disclose update the data model as the sensors acquire new data (see [0072]), all these implies this classification subroutine execute the process of classification when object is omitted from the database, and classification subroutine classifying at least one object into at least one predetermined category for updating said object classification list, because the data model continuously update as soon the new object being detected and the environment around the vehicle changes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining executes a classification subroutine when at least one object is omitted from object classification list for continuously updating the object surround the vehicle.

As per claim 27, Gloger et al., and Shuman et al. do not explicitly disclose bypasses a classification subroutine when said at least one object is included in object classification list. However, Shuman et al. disclose updating the data model as the new data is detected (see [0072]), also, Shuman et al. not only detect object, but identify the object along with their corresponding classification (see [0156]), and determine the object identify and not identify in the database. All these, implies bypasses a classification subroutine when said at least one object is included in object classification list because the data model update and classifies objects when the new object is detected, so the system not detect or classifies the same object over a multiple times. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Gloger et al. by combining bypasses a classification subroutine when said at least one object is included in object classification list to include the new object that were not include in the classification list to provide safety for the vehicle.

Remarks

4. Applicant's argument filed on 6/3/05 has been fully considered. Upon review the claims invention, and the two references cited, the new ground of rejection as above.

Applicant's argue on page 9, second paragraph, that Gloger et al. reference continuously classifies the same detected object over multiple cycles. However, Gloger et al. disclose in the abstract, lines 4-5, "**other parties** involved in a collision are detected and identified", this implies other objects, not the same object over multiple cycles. Also, in the abstract, lines 8-10, "their distance and relative velocity are **subsequently** determined sot that endangering objects can be selectively subjected to type classification in real time", this also implies the other parties or other objects are being classified in order one objects after the other objects, not the same object being classified over multiples cycles.

Applicant's argue on page 9, third paragraph, that Shuman et al. reference may detect the same object again in a later sensing cycle. However, Shuman et al. disclose in [0072] that the data model is continuously being updated over time as the sensors acquire **new data**, and as the environment around the vehicle **changes**, for example, as **other vehicles** in the vicinity of the vehicle, this implies Shuman et al. detect the new objects, not the same object again in a later sensing cycle.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner
Dalena Tran



September 5, 2005